

Request for Proposals, 2000-1
Joint Fire Science Program

U.S. Department of the Interior

Bureau of Indian Affairs
Bureau of Land Management
National Park Service
U.S. Fish and Wildlife Service
U.S. Geological Survey

U.S. Department of Agriculture

Forest Service

February 15, 2000

(Closes April 15, 2000)

**Task Statements on Intermountain West Shrublands,
Invasive Plants, and Remote Sensing**

Request for Proposals

by the
Joint Fire Science Program

A. Program Description

The Joint Fire Science Program (the Program) is a partnership of federal wildland management agencies with a need to address problems associated with accumulating wildland fuels (combustible material, generally living and dead plant materials) on lands administered by the USDA Forest Service and four bureaus in the Department of the Interior (Bureau of Indian Affairs, Bureau of Land Management, National Park Service, and the U.S. Fish and Wildlife Service). The U.S. Geological Survey is also a cooperator. For the purposes of this Request for Proposals, "wildlands" are considered to be forests and woodlands, shrublands, grasslands, and associated wetlands and riparian areas.

Wildland fuels have been accumulating during at least the past half century due to wildland fire management policies, wildland management practices, and other factors. The additional fuels contribute to intense fire behavior and increase the resistance of fires to control. Consequently, property and natural resources have been destroyed, costs of fire management have escalated, fire dependent ecosystems have deteriorated, and the risks to human life are high.

The Congress, agency administrators, Program partners, and others have recognized that the accumulation of wildland fuels must be reduced in order to reduce the human threat from fire and maintain natural resource values. Congress directed the Department of the Interior and the USDA Forest Service to develop a Joint Fire Science Plan to provide science-based support to land management agencies as they address this need. The Program was developed based on the Joint Fire Science Plan to help ensure that cooperating Federal land management agencies expedite scientifically sound, efficient, systematic, and effective solutions and monitoring programs that cross agency jurisdictions and fuel types.

The Joint Fire Science Plan addresses four issues critical to the success of the fuels management and fire use programs. These issues are:

1. The need to develop and implement consistent interagency fuels mapping and inventories with common classifications and resolution within ecosystems.
2. The need to evaluate and compare fuels treatment practices and techniques, including prescribed fire, thinning and other mechanical methods, increased utilization of biomass, and no treatment.
3. The need to develop treatment schedules, determine the frequency of subsequent treatments, and coordinate treatment schedules among agencies.
4. The need to establish compatible interagency processes and procedures for monitoring, evaluating, and reporting fuels treatments.

For further background on the goals of the Program, those considering submitting proposals and other interested parties are encouraged to review the Joint Fire Science Plan which is available via the Internet at: http://www.nifc.gov/joint_fire_sci/jointfiresci.html. In addition, the Program issued Requests for Proposals in June 1998 and February 1999 and subsequently selected and funded 46 projects. Lists of the funded projects can also be found at the above website.

This Request for Proposals contains three Task Statements for which proposals are requested. Non-Federal proposers are asked to ensure that a Federal cooperator participates in development and submission of proposals. Proposals must be received by the close of business on April 15, 2000 to be considered at this time. Questions should be directed, and proposals forwarded to:

Dr. Bob Clark
Program Manager
Joint Fire Science Program
National Interagency Fire Center
3833 S. Development Ave.
Boise ID 83705
phone (208) 387-5349
facsimile (208) 387-5960

Electronic submissions of proposals are acceptable provided they are followed by a hard copy of the title/signature page with original signature(s). The signature page must be received by April 15, 2000. Please e-mail electronic proposals, in Wordperfect, Microsoft Word, or Rich Text Format, to Bob_Clark@nifc.blm.gov.

B. Areas of Interest for Proposals

This Request for Proposals contains three separate tasks, and proposals are solicited on each of the tasks. In some cases it may be appropriate for proposals to respond to more than one task statement.

***Task 1:** Evaluate and compare the effectiveness of fuels management and vegetation manipulation treatments at affecting the frequency, severity and size of wildland fires in shrublands of the Intermountain area of the western United States.*

Intermountain areas within and adjacent to Nevada, Utah, and southern Idaho have experienced wildland fire occurrence five to ten times more frequently during the past two decades than during pre-European settlement. Several factors have contributed to this situation, including landscape fragmentation, livestock grazing patterns, and invasion by non-native annual grasses. For example, Nevada had over 1,100 fires in 1999 with more than 1.7 million acres burned. This is a 17-fold increase in burned area over the annual average and results in wholesale conversion of native ecosystems to annual grass monocultures. It also results in extreme economic hardship to local economies, long-term destruction of native fauna habitat, and excessive soil erosion.

The Joint Fire Science Program seeks proposals to evaluate the various fuel treatment techniques (fuels management and vegetation manipulation) to reduce the frequency, severity, and size of wildland fire in Intermountain shrublands. A wide array of fire, non-fire, and a combination of these techniques are available and proposals should focus on the materials, methods, timing, sequencing and costs associated with the various treatment techniques. Proposals should address factors such as potential landscape level effects of techniques on vegetative species composition, ecosystem health, resistance to invasive species, biological diversity, watershed stability, maintenance of biologic soil crusts, and social and economic considerations.

***Task 2:** Determine how invasive plants influence fire behavior and occurrence, which ecosystems are at greatest risk from fire-invasive plant interactions, and how fire and non-fire treatments could be used to control invasions.*

Certain non-native, invasive plants such as melaleuca (*Melaleuca quinquenervia*) and cheatgrass (*Bromus tectorum*) are established and/or proliferating in several North American ecosystems. One unfortunate consequence is an apparent increase in wildland fire frequency. For example, it has been reported that dominance by cheatgrass in the Intermountain West both extends the fire season and increases fire occurrence due to extreme flammability of cheatgrass when it is cured. Certain invasive plants may also contribute to significantly higher fuel loadings and fuel continuity, thereby increasing resistance to fire control. These situations occur in forests and woodlands, shrublands, grasslands, and wetlands across North America. The Joint Fire Science Program solicits proposals that would investigate and document (1) the influence of invasive plants on fire behavior and occurrence and the processes by which invasive plant species are inhibited, stimulated and/or proliferated by wildland fire, (2) which ecosystems or vegetation types are most susceptible to invasion following fire, or (3) the effect of treatments by which invasive plants can be controlled. Preference will be given to proposals that are broad in scope (e.g.,

address multiple ecosystems and geographic areas) and comprehensive with respect to these issues.

Task 3: Remote sensing. Develop and validate remote sensing tools, models, and approaches that can lead to more accurate, efficient, and cost-effective development, acquisition, or analysis of information necessary for planning, implementing, and monitoring fuel management programs.

While remote sensing tools and data of a range of types and resolutions are available that have potential uses for wildland fuels management, development of validated fuel management applications has been minimal. Existing national tools, while of some utility for large-scale strategic planning, are largely limited to minimally validated 1-km resolution products. Some higher-resolution tools have been developed for local or project-specific use, but have not seen broad testing or application. The cost-efficiency of accurate and consistent mapping and monitoring of factors relevant to fuels management at landscape to regional scales could be greatly enhanced by development of validated methods and models for linking ground-based data to remotely-sensed information. Potential applications include site-specific to national estimates of burned areas, fire severity, fuel consumption and emissions, fuel types and structural characteristics, or seasonal changes in fire hazard and fuel condition. Remote sensing tools also show great promise for quantifying fire characteristics (such as energy release, residence time, rate of spread) more accurately for operational use in management of active fires, and for testing, validation, and improving performance of fire behavior models on an landscape scale.

Proposals are sought for projects to develop, test, and validate remote sensing tools for use in fuel mapping and inventory, fuel and fire management planning, and development or testing of fire behavior models. Preference will be given to projects that show clear applicability to addressing fuel management problems; include approaches for testing and validation of models and methods; show high potential for applicability across a wide range of fuel types, conditions, or spatial scales; where data are (or are expected to be) available at appropriate spatial scales and temporal frequencies for the intended applications; and where use of remote sensing approaches will decrease costs and increase accuracy or coverage of mapping or monitoring.

C. Format for Proposals

Overview of the Proposal Format

The full proposal should specify rationale, objectives, methodologies, and deliverables in sufficient detail to allow an informed peer to assess the proposal's validity in addressing one or more task statements in the Request for Proposals (RFP). The proposal should also identify criteria by which success of the project can be determined. The proposal text and accompanying tables and figures should be limited to 12 pages (not including detailed budget documentation, curriculum vitae, and similar information). Complete annual and total budgets and a firm timeline for deliverables must be included, as well as a mechanism for "technology transfer" to appropriate end users. The proposal also provides a record of management responsibility and accountability for various aspects of the project.

Title Page

The following format should be used for the title page (not to exceed 1 page):

Project Title:

Principal Investigator(s):

Affiliation:

Address:

Telephone/Facsimile Number(s):

E-mail:

Duration of Project:

Annual Funding Requested from the Joint Fire Science Program: \$ _____

Total Funding Requested from the Joint Fire Science Program: \$ _____

Abstract: Summarize the proposed project in a brief abstract not to exceed ½ page. The abstract should include the justification for the proposed project in relation to one or more task statements in the Request for Proposals, objectives, appropriate methodology, and applicability of results.

E-mail or facsimile proposals are acceptable provided that the e-mail or facsimile transmission is followed by a hard copy of the title page with original signature(s). If hard copy is provided only 1 copy is necessary.

Introduction

An introductory section should include:

- 1) Project Justification. A summary of the issue(s), why the project needs to be done (relevance to task statements in the Request for Proposals), and benefits derived.
- 2) Project Objectives. A statement of the project objective(s) must be clearly stated and measurable. This should include a brief statement of the hypothesis to be tested (if applicable), what information or product(s) will be provided at the end of the project, and how the information or product can be used to resolve the issue(s) stated in the task statement(s).
- 3) Background. This section includes a concise review and synthesis of existing knowledge and previous research or other pertinent background information in the project task area.

The introductory section is intended to provide peer reviewers and the Governing Board with evidence that

the proposed work compliments previous and on-going work and that the work is applicable to task statements in the Request for Proposals. Although the literature may be extensive, the synthesis should generally include reference to no more than about 15-20 of the most important and/or most relevant sources.

Materials and Methods

This section should describe procedures proposed for conducting the project in sufficient detail that a knowledgeable reviewer could understand the process and that a peer could replicate the project. A brief description of the study sites (as applicable) should be included.

Project Duration

Proposals will generally not be funded for longer than three years although requests for extensions or additional work may be considered.

Budget

The proposed budget should be provided in sufficient detail to identify indirect costs and related surcharges, to separate labor costs from operational costs, and to identify salaries associated with funded scientists. Annual costs should be provided. Separate line items for "capitalized" equipment should be included. Outyear projections should be included for multi-year proposals. Proposed budgets should include travel expenses for at least one Principle Investigator (PI) to participate in an annual 2-3 day PI workshop.

Deliverables

Provide specific details on the information or product(s) that would be provided by the proposed project, and realistic time tables for delivery dates. It is expected that all final products will include an electronic version suitable for distribution, posting, etc. Descriptions in English units, with metric equivalents in parenthesis, are required. Annual progress reports are required.

Technology Transfer

It is imperative that information or products reach field managers in a useful form. Therefore, each proposal should include a description of how the "technology" would be transferred to the field. Also, proposers are strongly encouraged to use Internet websites to post information regarding funded projects.

Qualifications of Investigators

Include Curriculum Vitae for principal investigator(s) and at least 1 major collaborator. These should reflect recent, relevant experience and publication(s) and should not exceed 2 pages.

Checklist for Proposal Submissions

Does the proposal:

- * include an introduction or background section that includes the specific objectives of the project and describes how the proposed work is relevant to one or more task statements in the RFP?
- * include a list of cooperators and their proposed contribution, including the original signature of the principal investigator and an authorized signature from a cooperating federal unit (See Proposal Format, Title Page)?
- * include a relevant Curriculum Vitae of the Principal Investigator(s) which demonstrates ability to complete the proposed work?
- * include a review and synthesis of related past and current literature and work?
- * include an adequate description of the specific location of the proposed work?
- * include a description of the materials and methods of the proposed work including (as appropriate) experimental design and statistical analysis(es)?
- * include a detailed annual and total budget, including identification of salaries and indirect costs?
- * include a "Justification of Need for Salary Support," approved by appropriate authority, if needed? (See Salary Policy Section)
- * include a description and cost of equipment which needs to be purchased to support the work?
- * include a list of deliverables with proposed dates of delivery?
- * include a technology transfer mechanism?

D. Review and Evaluation of Proposals

The following factors will be considered in reviews and evaluations of proposals to the Joint Fire Science Program:

1. How well does the proposal address one or more specific task statements identified in the RFP?
2. Does the proposal follow the requested format and include all the requested information?
3. Will the proposed work provide information or products that are useful across agency jurisdictions, fuel types, and geographic areas?
4. Does the proposal provide for adequate transfer of information or products, consider general availability and usefulness of proposed technology, and, as appropriate, provide for a feedback mechanism to the study team for product testing and improvement?
5. Does the proposal provide for adequate collaboration among agencies, between fire and land management personnel and researchers or other collaborators, and between disciplines to ensure broad integration of existing knowledge and approaches as well as applicability of results and recommendations?

6. Are study approaches or design and statistical analysis(es) appropriate and adequate to meet stated objectives?
7. What are the qualifications of the team to do the proposed work? Are adequate institutional resources and support available?
8. Are proposed timeframes and budget reasonable and adequately justified, including budgets for proposed sub-agreements?
9. If formal cooperative arrangements are proposed (e.g., with universities or other non-federal organizations), is there evidence that these will be feasible and agreeable to the cooperators?

E. Indirect Costs and Salary Policy

Indirect Costs

The Program recognizes the need of participating organizations to recover reasonable indirect costs. Indirect costs up to 15 percent (for the unit performing the work) may be included in proposals without detailed justifications, however, any indirect costs exceeding 15 percent must be justified. Similarly, indirect costs in excess of 10 percent on pass-through arrangements from federal units to cooperating federal or non-federal units must be justified. The Governing Board of the Joint Fire Science Program reserves the right to negotiate budget amounts and deliverables (including indirect costs over 15 percent) with proposing organizations.

Salary Policy

Normally, salaries of permanent full-time federal employees are expected to be provided by their agencies. This is also true of university faculty on 12-month tenure-track appointments. These employees are already fully funded by their institutions. However, the Governing Board recognizes that there can be mitigating circumstances arising from the need to fill in behind these employees when they are reassigned to Joint Fire Science Program funded activities, or due to policies of individual organizations. In such cases, the program may agree to fund salaries of permanent employees. A brief justification must be included in the proposal, and the justification must be certified by an appropriate institutional authority, other than the Principal Investigator or other cooperator on the proposal, at the employee's organization or institution. The format provided below should be used for the certification. In addition, permanent employee salary costs must be explicitly identified in the project budget. The Program requires no special justification (other than a brief description of the need for the position in the budget justification section of the proposal) for funding temporary or term employees, post-doctoral employees, or graduate or undergraduate students.

Certification to the Joint Fire Science Program
Justification of Need for Salary Support

I hereby certify the attached Justification of Need to provide temporary salaries for full-time permanent employee (s)_____ (*list name of employee(s)*) is necessary and appropriate to enable him/her (them) to fully and directly participate in the proposed project.

I understand that salary funding for this/these employee(s) directly involved in the proposed project is temporary and will not be provided beyond the duration of the proposed project.

Signature_____

Date_____

Title _____

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